

Space commercialization holds great promise for the development of new drugs, ultrapure materials with incredible strength and flexibility, and even space tourism. To make space commercialization a reality, the US needs to support the growth of its domestic commercial space launch facilities or "spaceports." It's a sad state of affairs, but U.S. satellite manufacturers are facing increasing pressure to use foreign launch services due to a lack of a sufficient domestic launch capability.

The purpose of the Spaceport Equality Act is to ensure a strong U.S. launch capability. This act will provide tax exempt status for spaceport facility bonds, just like we do for publicly-owned airports and seaports. The government will not be directly funding the commercial space transportation business, but creating the conditions necessary to stimulate private sector capital investment in these spaceports. Coupled with the development of "reusable launch vehicles," these spaceports will be "aero-space ports" that will accommodate both air and space vehicles. Reusable launch vehicles are essential to reduce the cost of access to space by a factor of 10 to 100 from its present level of \$2000/pound.

My home State of Nevada has an important role to play in space commercialization. As part of NASA's Space Launch Initiative, a public-private team will use the Nevada Test Site for orbital flights. This sets the stage for commercial space operations in Nevada as early as 2003-4.

The Spaceport Equality Act simply puts spaceports on equal footing with airports by treating them the same for purposes of exempt facility bond rules. I urge my colleagues to support this legislation which is essential to opening the space frontier for continued civil exploration and commercial development.

Mr. LUGAR. Madam President, earlier this month, the United States and the country of Kazakhstan successfully completed one of the most ambitious nonproliferation projects undertaken in history—the securing of one of the world's largest stockpiles of weapons-grade plutonium under the auspices of the Nunn-Lugar Cooperative Threat Reduction program. The security surrounding some three tons of plutonium—sufficient to make some 400 bombs—was enhanced and, commencing in 1998, the fuel assemblies containing spent nuclear fuel were packaged to prevent theft.

In August of 1998, I visited a torpedo factory in Almaty, then the capital of Kazakhstan, that had been converted to manufacture the big steel canisters in which the plutonium-rich assemblies were packaged and sealed. The last canister was sealed and lowered into a cooling pond in early July of this year.

Last week, the Washington Times carried a special report by Christopher

Pala on this program under the title of "Kazakh Plutonium Stores Made Safe." I ask unanimous consent that this article be printed in the RECORD and urge all of my colleagues to inform themselves about a real success story in U.S.-Kazakhstan relations.

There being no objection, the material was ordered to be printed in the RECORD, as follows:

[From the Washington Times, July 21, 2001]

KAZAKH PLUTONIUM STORES MADE SAFE

(By Christopher Pala)

ALMATY, KAZAKHSTAN.—U.S. officials last week voiced quiet satisfaction after one of the world's largest stockpiles of weapons-grade plutonium, located in a sensitive zone, was successfully made theft-proof in what the Energy Department called "one of the world's largest and most successful non-proliferation projects."

More than three tons of plutonium, enough to make about 400 bombs, had been stored in a fast-breeder reactor on the Caspian Sea shore in security conditions one early visitor described as similar to those of an office building.

Today, the plutonium has been fully secured, said Trisha Dedik, director of the U.S. Department of Energy's Office of Nonproliferation Policy, in an interview July 13 in Almaty, Kazakhstan's economic capital. "It's been a great success."

A day earlier, Miss Dedik and others took part in a ceremony at Aktau with Kazakh officials celebrating completion of the project.

The plutonium was produced by a BN-350 fast-breeder nuclear reactor on the arid northwestern shore of the Caspian, a few miles from the city of Aktau. Both the city and 350-megawatt power plant on the Mangyshlak Peninsula, the first-ever commercial breeder reactor, owed their location to considerable uranium deposits that were mined nearby.

The plutonium had been intended to be shipped to other parts of the Soviet Union for use as fuel in other reactors like it, but only one, the BN-600, was ever built. Located near Yekaterinburg on the eastern slope of the Urals nearly 900 miles north-northeast of Aktau, it ultimately took little or no plutonium from the BN-350, so the material just piled up.

The plant closed in 1999, at the end of its useful life.

After 26 years of providing electricity and water (by powering a desalination plant) to the Aktau region, the plant had an accumulation of 3,000 15-foot cylinders, called fuel assemblies, containing spent nuclear fuel.

About 7,250 pounds of weapons-grade plutonium could be extracted from the assemblies with relative ease, according to the Energy Department.

Nearly half the assemblies emitted little radiation and could be safely handled by workers wearing light protection. The other half were too "hot" to be handled by anything but robots. All spent years in a cooling pond the size of a football field at the plant.

"When I walked in there the first time back in 1995, it had all the security of a modern office building," said Fredrick Crane, an American physicist familiar with the plant.

"It was a clean and well-run reactor," said Mr. Crane. There were some guards, but otherwise all you needed was one code, like in an airport terminal, and you were in."

With each fuel assembly weighing 300 pounds, a couple of strong men with accomplices inside could spirit out the half-dozen

cylinders it would take to make a nuclear bomb.

"It was attractive material, and it was accessible," said Miss Dedik of the Energy Department.

Just 500 miles to the south along the Caspian coastline lies Iran and what U.S. officials say is a covert nuclear-weapons program. Eight hundred miles to the southeast is Afghanistan, base and refuge of accused terrorist mastermind Osama Bin Laden, and due west, straight across the Caspian, Chechnya smolders.

"There are fast-breeder reactors in Western Europe and Japan, but the plutonium produced there doesn't accumulate like it did in Aktau. It's reprocessed pretty quickly," Miss Dedik said.

"There just aren't any big stockpiles. Remember, most weapons-grade plutonium is produced by dedicated reactors, controlled by the military, and they're usually much better guarded than this one was."

So in 1996, the government of President Nursultan Nazarbayev, the International Atomic Energy Agency and the United States quietly set up a program to immediately enhance security and, starting in 1998, to package the fuel assemblies to prevent theft.

Miss Dedik and Mr. Crane were among several dozen Americans who worked on the project, which was funded by the U.S. Cooperative Threat Reduction Program under the Nunn-Lugar Act. The law was named for its sponsors, Sen. Richard G. Lugar, Indiana Republican, and then-Sen. Sam Nunn, Georgia Democrat.

A torpedo factory in Almaty that had been converted to civilian work was assigned to manufacture big steel canisters in which four or six of the plutonium-rich assemblies—some "hot," some "cooled"—were packed together and sealed before being returned to the cooling pond.

Weighing more than a ton, the filled canisters are far too heavy to be handled by anything but a large robot, and all of them now emit lethal doses of radiation.

Last month, after nearly three years and \$43 million in U.S. support, the 478th and last canister was welded shut and lowered into the pond.

At the plant, Mr. Crane said, there are now manned gates, closed-circuit TV cameras, X-ray machines and turnstiles with magnetic cards, along with sensors that monitor the nuclear materials around the clock.

The packing is designed to last 50 years, but the plutonium isn't destined to stay at the closed Aktau plant that long.

Eventually, under a decree signed six months ago by Mr. Nazarbayev, the canisters will be taken 2,750 miles by train to the former nuclear-testing grounds at Semipalatinsk, on the other side of this country four times the size of Texas.

There, silos will be dug into the steppe and the fat cylinders will be buried, using a technique perfected in the United States.

"It will be the longest rail shipment of plutonium ever attempted," said Miss Dedik. "They will have to design special transportation casks."

And since the rail line wanders through what is now Russia and Kyrgyzstan, special loops will have to be built so that the plutonium stays in Kazakhstan during its whole voyage.

CONTROLLING THE PROLIFERATION OF SMALL ARMS AND LIGHT WEAPONS

Mrs. FEINSTEIN. Madam President, last week I came to the floor to express